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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,757	03/26/2001	John C. Hebeisen	022723-0017	7870
21125	7590	03/03/2004	EXAMINER	
NUTTER MCCLENNEN & FISH LLP WORLD TRADE CENTER WEST 155 SEAPORT BOULEVARD BOSTON, MA 02210-2604			PADGETT, MARIANNE L	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/817,757

Applicant(s)

Mushl et al

Examiner

M.L. Padgett

Group Art Unit

1702

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 10/24/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-6, 9-17, 19, 21-23 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☒ Claim(s) 19 + 23 is/are allowed.
- ☒ Claim(s) 1-6, 9-17, 21-22 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received
- in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 10/24/03
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

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(1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/24/03 has been entered.

(2) Applicant's remarks on page 2 of the 10/24/03 response with respect to "high" in "high velocity oxy-fuel spraying" provide no metes and bound for the relative word "high", but are taken to mean that no such bounds are required, because the total term is jargon that does not refer to a particular range of velocities, hence **any** oxy-fuel spraying process will be considered to read on the claimed process, and applicant's remarks can be considered to provide file wrapper estoppel to this issue.

(3) As claim 21 has been amended to require removal of the capsule, and as one way of considering the Becker et al (4,477,955) patent was that "core" made up part of the capsule, and it is a not removed, that aspect of the rejection over Becker et al is over come, but Becker et al's encapsulation is sufficient to read on "substantially enclosing" as 102/103 issues as previously discussed (p.5 of paper #10, mailed 11/6/02) remain, especially as claim 21 still need not enclose the "core" or remove it. With respect to independent claims' scope, it is noted that all "substantially enclose" the first material, but only claim 1 also encloses the core. Claims 19 & 23 remove both core and capsule, while 21 need only remove capsule and claim 1 neither. Spray deposition of the first material is only required by claims 19 & 23. The 2nd material being powder + hot isostatic pressing (HIP) are limitations of 1, 19 and 23, Only in claims 19 and 23 is the resulting structure required to be hollow with the inner surface formed of the first material.

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(4) The EP reference to McCollough et al is noted to be equivalent to the previously discussed U.S. patent to the same (section 5 in paper # 10) and to have equivalent teachings to Becker et al (4,477,955), but without the teaching of Ni plating to prevent oxidation, help bond continuity and prevent Cr migration into alloy (col. 3, lines 53-66 of Becker (955)).

(5) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(6) Claim 21 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Becker et al (955) previously discussed in section 4 and 6 of paper #10, mailed 11/6/02, plus section #5 of paper # 12, mailed 5/22/03.

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Applicants sweeping statement that ignore limitations that are clearly present in Becker et al are not convincing. For claim 21 as presently written, the valve body 10 reads on the claimed core; the suggested Ni plating on the first material, the can 16 and its various components are the capsule; the powder which forms the lining material (Ni-alloys, Hastelloy alloys, stainless steels, etc) and is injected into the enclosure formed by the value (core) and the can (capsule) reads on the 2nd material. It is noted that since the Ni-plating protects against oxidation and Cr migration, it is at least more corrosion resistant for some purposes, which is all that is necessary to satisfy the comparison limitation. The taught HIP forms the requisite metallurgical bonds, and it is taught that the can may be removed from the lining after HIP during a machining step. The resulting structure is clearly non-linear in shape, thus all limitations may still be considered covered. Also, particularly note Fig. 1, discussion thereof and Col. 2, line 65, col. 3, and line 20.

Alternately, while the first material is clearly enclosed by the can capsule, whether the "substantially enclosing" requires surrounding by the capsule its self on most sides or just requires a major roll in closing the powder off from atmosphere and shaping /holding the 2nd material may be debated. Obviousness arguments for this alternative were previously provided and remain relevant.

(7) Claims 1-2, 5-6, 9-17 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al (955) in view of van Nederveen et al, or visa.

While Becker et al (955) suggest Ni-plating the inner passage of the valve/core before the HIP procedure, they do not disclose employing spray deposition to do so, nor that its end results is more wear resistant than the powder 2nd material, however van Nederveen et al supply motivation for use of that particular deposition procedure, as they show thermal spraying of Ni

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on to a powder material of composition consistent with either the core or "second" material in Becker et al, where HIP is subsequently preformed to produce advantageous bonding with the powder layer as well as a more wear resistant surface. In Van Nederveen et al., see abstract; Fig. 1; page 1, lines 1-20; p.2, lines 2-10; and p.3, lines 10-17. It would have been obvious to one of ordinary skill in the art to apply the Ni-plating of Becker et al, via the thermal spraying technique of Van Nederveen et al, as it supplies a specific process that is shown to have advantageous binding with like materials, after analogous HIP processing. Note the resulting bond layer is shown by Van Nederveen to be more wear resistant, which would also have been advantageous. That it is between the core and lining layer is irrelevant to these claims as written, as the core may remain as part of the product.

Becker et al (955) also does not provide teachings where the encapsulation totally surrounds a core, as noted in the discussion of claim 21 in section 6 above. Van Nederveen et al demonstrate a product where powder layer and core of materials analogous to those of Becker et al are desired to be formed. Noting previous argument about external verses internal coating on p.5 of paper 10, it is seen that Van Nederveen et al provides motivation for a product that requires this alternate orientation, and it would have been obvious to employ Becker et al process in producing the coating layers of van Nederveen et al, with the addition that since both the core and can/sleeve/capsule may be made of the same material, with the advantages of Ni bond layer demonstrated in Becker et al, and thermal spraying & surface wear layer from the secondary reference, both core and capsule contacting the powder would have been sprayed with Ni, and the HIP would have bonded both as taught by col. 3, lines 3-12 of Becker et al. The capsule would have been removed, as is consistent with both references, after the HIP procedure.

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(9) Claims 1-5, 9-14 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ritter et al (5,822,853), as discussed in Sections 6-7 of paper # 12.

Applicants' arguments are not convincing as they appear to be based on semantics. That Ritter et al do not call the components of their process by the same name as applicant, does not negate like function in analogous processes. Also that Ritter et al's final product has a different use than applicant's contemplate is irrelevant to claims whose end use is open or unspecified. As clearly stated in Ritter et al, the process forms both inner and outer walls, that may be metallurgically bonded by an HIP process, and uses 2 sets of sacrificial channel fillings i.e. correspond to sacrificial cores. The HIP takes place in a can, which corresponds to the claimed capsule. Use of powder is explicitly suggested (col. 5, lines 15-20 and Ex. 1) for creating the permanent part of the structure, with ranges of useful materials consistent with claimed properties, especially considering the end use in turbine engines!

(9) Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al as discussed in section 7 of paper # 12.

(10) On review of the procedure of Ritter et al, it is concluded that there would be no basis for using a spraying technique for either of the wall formations, hence the spraying techniques limitations differentiate over Ritter et al.

Claims 19 and 23, which require both the deposition via spray of the 1st material, and the removal of both the core and the capsule, appear allowable at this time as, distinguishing over the cited prior art.

(11) Other art of interest, but not reading on claims 19 or 23, include the UK patent to Becker et al, that is essentially equivalent to the US; and Manilla et al or Forbes Jones et al with

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further heated powder consolidation techniques for protective coatings, but lacking the above significant features.

(12) Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on Monday-Friday from about 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beck Shrive can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Padgett/LR
February 24, 2004
February 26, 2004

A handwritten signature in cursive script, appearing to read "Marianne Padgett", with a long horizontal flourish extending to the right.

**MARIANNE PADGETT
PRIMARY EXAMINER**